

PERSONAL INFORMATION Cristina Ana MOCANU (CONSTANTINESCU)



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 Sex Female | Date of birth 19/05/1987 | Nationality Romanian

WORK EXPERIENCE

August 2020–Present

**Scientific Researcher III**, Institute of Cellular Biology and Pathology “Nicolae Simionescu” B.P. Hasdeu nr.8, 050568 Bucharest (Romania), <http://www.icbp.ro/>

**In vivo experiments:** experimental design and management; generating appropriate experimental models; investigations (Ecocardiography, IVIS imaging); welfare monitoring through the experiment; final tissue sampling and storage for further analysis.

**In vitro experiments:** 2D or 3D cell cultures, in static or dynamic flow conditions to assess the therapeutic potential of nanocarriers.

**Cellular and molecular techniques:** Flow Cytometry, PCR, Western Blotting.

**Imagistic techniques:** histology, immunofluorescence, micrography, analysis.

**Statistical analysis, data validation** and interpretation of preclinical data.

**Disseminating scientific results** at national and international conferences and symposia. Member of the Animal Welfare Body IBPC „N. Simionescu”.

Sector Research

May 2016 – July 2020

**Scientific Researcher**, Institute of Cellular Biology and Pathology “Nicolae Simionescu” B.P. Hasdeu nr.8, 050568 Bucharest (Romania), <http://www.icbp.ro/>

**In vivo experiments:** experimental design and management; generating appropriate experimental models; investigations (Ecocardiography, IVIS imaging); welfare monitoring through the experiment; final tissue sampling and storage for further analysis.

**In vitro experiments:** 2D or 3D cell cultures, in static or dynamic flow conditions to assess the therapeutic potential of nanocarriers.

**Cellular and molecular techniques:** Flow Cytometry, PCR, Western Blotting.

**Imagistic techniques:** histology, immunofluorescence, micrography, analysis.

**Statistical analysis and data validation using statistical software (e.g., Prism) and interpretation of preclinical data.**

**Disseminating scientific results** at national and international conferences and symposia. Member of the Animal Welfare Body IBPC „N. Simionescu”.

Sector Research

March 2013 – April 2016

**Research Assistant**, Institute of Cellular Biology and Pathology “Nicolae Simionescu” B.P. Hasdeu nr.8, 050568 Bucharest (Romania), <http://www.icbp.ro/>

**In vivo experiments:** administering nanoparticles, monitoring animal welfare, final tissue sampling and storage for further analysis.

**In vitro experiments:** 2D cell cultures.

**Cellular and molecular techniques:** Flow Cytometry, PCR, Western Blotting.

**Imagistic techniques:** histology, immunofluorescence, micrography, analysis.

**Statistical analysis and data validation** and interpretation of preclinical data.

**Disseminating scientific results** at national and international conferences and symposia.

Sector Research

## EDUCATION

- 2013-2019 **Doctoral studies**  
 Thesis title Studii farmacologice pentru dezvoltarea unor strategii nanoterapeutice ale bolilor cardiovasculare (Pharmacological studies for the development of nanotreatment strategies for cardiovascular diseases)  
 Univesity of Agricultural Sciences and Veterinary Medicine of Bucharest (Romania)
- 2006-2012 **Bachelor degree**  
 Faculty of Veterinary Medicine, USAMV Bucuresti
- 2002-2006 **Baccalaureate**  
 "Ion Barbu" Highschool, Bucharest, Romania

## TRAINING

- 30 May – 10 June 2016 **FELASA accredited course for Laboratory Animal Science, Modules A, B, C and D (ID 051/15)**  
 University of Crete (Department of Biology), Greece in collaboration with the Institute of Molecular Biology and Biotechnology, FORTH, Crete, Greece
- 21-29 September 2020 **2nd PATHBIO Mouse Imaging Master Class (online)**  
 Phenomin – Institut Clinique de la Souris, Strasbourg
- 20-24 May 2019 **Summer School on "Non-animal approaches in Science"**  
 Joint Research Center, European Commission, Ispra, Italy
- 15-19 June 2014 **Summer School of Nanomedicine and Innovation**  
 University of Tel Aviv, Israel

## PERSONAL SKILLS

Mother tongue(s)	Romanian				
Other language(s)	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
	English	C2	C2	C2	C2

- Communication skills**
- Presentations at national and international conferences;
  - Presentations at scientific seminars;
  - Involvement in training young researchers in the laboratory.

Digital competence	Self-assessment				
	Information processing	Communication	Content creation	Safety	Problem solving
	Independent user	Independent user	Independent user	Independent user	Independent user

- Job-related skills**
- Planning and analytical acumen:** effective time management, complex tasks coordination, accountability and continous self-improvement within the team environment.
- In Vivo Modeling & Techniques:** microsurgery to induce experimental models (vascular inflammation via left carotid artery ligation), and non-invasive functional assessment via Echocardiography (in mice).

**Advanced Technical & Cellular Analysis:** core laboratory techniques, including high-throughput cellular analysis using Flow Cytometry and specialized analysis software.

**Imaging, Data & Statistical Analysis:** Skilled in digital processing of scientific micrographs (IrfanVlew, Adobe Photoshop, Corel Draw/Photo, GimPhoto), quantitative scientific image analysis (ImageJ), and robust statistical analysis using specialized software (GraphPad).

## ADDITIONAL INFORMATION

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| <b>Fellowships</b>   | <p><b>FELASA Sponsored Student Scholarship</b> to attend the <i>14th FELASA Congress</i>, Prague, Czech Republic (10-13 June 2019), focusing on advances in Laboratory Animal Science.</p> <p><b>ESACT JRC Travel Grant</b> to attend the <i>JRC Summer School on "Non-animal approaches in Science"</i>, Ispra, Italy (20-24 May 2019), emphasizing alternatives to animal use in science (3Rs).</p> <p><b>Fellowship Recipient (2014)</b> to attend the <i>Summer School of Nanomedicine and Innovation</i>, Tel Aviv, Israel (15-19 June 2014), specializing in novel therapeutic strategies.</p>  |
| <b>Publications</b>  | 21 articles in ISI journals (see Annex).  |
| <b>Projects</b>  | <p><b>THERAVALDIS</b> (Targeted therapies for aortic valve disease in diabetes) – P_37_ 298 My SMIS: 104362_115/13.09.2016</p> <p><b>NanoRAGE</b> (Endothelial-Targeted Nanotherapies Designed for Receptor for Advanced Glycation Products (RAGE) Silencing in Atherosclerosis) – PN-II-RU-TE-2014-4-1837_35/2015</p> <p><b>INTERA</b> (Smart therapies for non-communicable diseases based on the controlled release of pharmacological compounds from encapsulated cells after genetic manipulation or vectored bionanoparticles) – PN-III-P1-1.2-PCCDI-2017-0697.</p> <p><b>Sisteme de Inspirație Biologică pentru Entități Proiectate Structural și Funcțional</b> – PN-II-ID-PCCE-2011-2-0028_4/2012.</p>                   |
| <b>Patents</b>   | <p><b>European Patent application no: 17464014.4-1102</b>, inventors: Gaidau C, Călin M, <b>Constantinescu CA</b>, Rebleanu D, Stoica T: "Leather with anti-microbial and self-cleaning properties and process for obtaining thereof"</p> <p><b>OSIM, application no. A/00966</b>, inventors: Gaidau C, Călin M, <b>Constantinescu CA</b>, Rebleanu D, Stoica: "Leather with antimicrobial and self-cleaning properties and process for obtaining thereof"</p> <p><b>OSIM application no A/00811</b>, inventors: Călin M, Rebleanu D, <b>Constantinescu CA</b>, Voicu G, Deleanu M, Mănduțeanu I: "Process for obtaining the nanocarriers for targeted delivery of interference ribonucleic acid (RnA) to aortic valve cells"</p> |
| <b>Member of scientific and professional organizations</b> | <p><b>ARSAL</b> (Asociația Romana pentru Știința Animalelor de Laborator, Romanian Association for Laboratory Animal Science): Full member of <b>FELASA</b> (Federation of European Laboratory Animal Science Associations), since 2015;</p> <p><b>SRBC</b> (Romanian Society of Cellular Biology), din 2013;</p> <p><b>CMV</b> (Romanian College of Veterinary Surgeons), din 2012.</p>  |

## ANNEX

## ISI INDEXED ARTICLES

1. Voicu G, **Mocanu CA**, Safciuc F, Rebleanu D, Anghelache M, Cecoltan S, Droc I, Simionescu M, Manduteanu I, Calin M, 2024. VCAM-1 targeted nanocarriers of shRNA-Smad3 mitigate endothelial-to-mesenchymal transition triggered by high glucose concentrations and osteogenic factors in valvular endothelial cells. *International Journal of Biological Macromolecules* 281(1):136355. <https://doi.org/10.1016/j.ijbiomac.2024.136355>. IF 8.5.
2. Voicu G, **Mocanu CA**, Safciuc F, Anghelache M, Deleanu M, Cecoltan S, Pinteala M, Uritu CM, Droc I, Simionescu M, Manduteanu I, Calin M, 2023. Nanocarriers of shRNA-Runx2 directed to collagen IV as a nanotherapeutic system to target calcific aortic valve disease. *Materials Today Bio* 20:100620. <https://doi.org/10.1016/j.mtbio.2023.100620>. IF 8.7.
3. Filippi A, Constantin A, Alexandru N, **Mocanu CA**, Vlad ML, Fenyó IM, Simionescu A, Simionescu DT, Manduteanu I, Georgescu A, 2022. VLA4-Enhanced Allogeneic Endothelial Progenitor Cell-Based Therapy Preserves the Aortic Valve Function in a Mouse Model of Dyslipidemia and Diabetes. *Pharmaceutics* 2022, 14(5), 1077; <https://doi.org/10.3390/pharmaceutics14051077>. IF 6.525.
4. Voicu G, Rebleanu D, **Mocanu CA**, Tanko G, Droc I, Uritu CM, Pinteala M, Manduteanu I, Simionescu M, Calin M, 2022, VCAM-1 Targeted Lipopolyplexes as Vehicles for Efficient Delivery of shRNA-Runx2 to Osteoblast-Differentiated Valvular Interstitial Cells; Implications in Calcific Valve Disease Treatment. *Int. J. Mol. Sci.* 2022, 23(7), 3824; <https://doi.org/10.3390/ijms23073824>. IF 6.208.
5. **MOCANU CA**, FUIOR EV, VOICU G, REBLEANU D, SAFCIUC D, DELEANU M, FENYO IM, ESCRIOU V, MANDUTEANU I, SIMIONESCU M, CALIN M, 2021, P-selectin targeted RAGE-shRNA lipoplexes alleviate atherosclerosis-associated inflammation. *Journal of Controlled Release* 338:754-772. <https://doi.org/10.1016/j.jconrel.2021.09.012>, IF 10.5.
6. Fuior EV, **Mocanu CA**, Deleanu M, Voicu G, Anghelache M, Rebleanu D, Simionescu M, Calin M, 2020. Evaluation of VCAM-1 Targeted Naringenin/Indocyanine Green-Loaded Lipid Nanoemulsions as Theranostic Nanoplatforms in Inflammation. *Pharmaceutics* 2020, 12(11), 1066; <https://doi.org/10.3390/pharmaceutics12111066>. IF 4.421.
7. **CONSTANTINESCU CA**, FUIOR EV, REBLEANU D, DELEANU M, SIMION V, VOICU G, ESCRIOU V, MANDUTEANU I, SIMIONESCU M, CALIN M, 2019. Targeted Transfection Using PEGylated Cationic Liposomes Directed Towards P-Selectin Increases siRNA Delivery into Activated Endothelial Cells. *Pharmaceutics* 11(1) pii:E47. doi:10.3390/pharmaceutics11010047, IF 4.773.
8. FUIOR EV, DELEANU M, **CONSTANTINESCU CA**, REBLEANU D, VOICU G, SIMIONESCU M, CALIN M, 2019. Functional Role of VCAM-1 Targeted Flavonoid-Loaded Lipid Nanoemulsions in Reducing Endothelium Inflammation. *Pharmaceutics* 11(8). doi:10.3390/pharmaceutics11080391. pii: E391, IF 4.773.
9. REBLEANU D, GAIDAU C, VOICU G, **CONSTANTINESCU CA**, MANSILLA SÁNCHEZ C, ROJAS TC, CARVALHO S, CALIN M, 2019. The impact of photocatalytic Ag/TiO<sub>2</sub> and Ag/N-TiO<sub>2</sub> nanoparticles on human keratinocytes and epithelial lung cells. *Toxicology* 416:30-43. doi:10.1016/j.tox.2019.01.013, IF 3.547.
10. TUCUREANU MM, FILIPPI A, ALEXANDRU N, **CONSTANTINESCU CA**, CIORTAN L, MACARIE R, VADANA M, VOICU G, FRUNZA S, NISTOR D, SIMIONESCU A, SIMIONESCU DT, GEORGESCU A, MANDUTEANU I, 2019. Diabetes-induced early molecular and functional changes in aortic heart valves in a murine model of atherosclerosis. *Diabetes & Vascular Disease Research* 1–15. <https://doi.org/10.1177/1479164119874469>, IF 2.357.
11. TUCUREANU MM, REBLEANU D, **CONSTANTINESCU CA**, DELEANU M, VOICU G, BUTOI E, CALIN M, MANDUTEANU I, 2018. Lipopolysaccharide-induced inflammation in monocytes/macrophages is blocked by liposomal delivery of Gi-protein inhibitor. *International Journal of Nanomedicine* 13:63-76. doi:10.2147/IJN.S150918, IF 4.471.

12. DAVID G, CLIMA L, CALIN M, **CONSTANTINESCU CA**, BALAN-PORCARASU M, URITU CM, SIMIONESCU BC, 2018. Squalene/polyethylenimine based non-viral vectors: Synthesis and use in systems for sustained gene release. *Polymer Chemistry* 9:1072-1081. doi:10.1039/c7py01720k, IF 4.927.
13. SIMIONESCU BC, DROBOTA M, TIMPU D, VASILIU T, **CONSTANTINESCU CA**, REBLEANU D, CALIN M, DAVID G, 2017. Biopolymers/poly( $\epsilon$ -caprolactone)/polyethylenimine functionalized nano-hydroxyapatite hybrid cryogel: Synthesis, characterization and application in gene delivery. *Materials Science and Engineering:C* 81:167-176. doi:10.1016/j.msec.2017.07.031, IF 5.08.
14. SIMION V, **CONSTANTINESCU CA**, STAN D, DELEANU M, TUCUREANU MM, BUTOI E, MANDUTEANU I, SIMIONESCU M, CALIN M, 2016. P-Selectin Targeted Dexamethasone-Loaded Lipid Nanoemulsions: A Novel Therapy to Reduce Vascular Inflammation. *Mediators Inflamm*, Article ID 1625149. <https://doi.org/10.1155/2016/1625149>, IF 3.232.
15. SIMION V, STAN D, **CONSTANTINESCU CA**, DELEANU M, DRAGAN E, TUCUREANU MM, GAN AM, BUTOI E, CONSTANTIN A, MANDUTEANU I, SIMIONESCU M, CALIN M, 2016. Conjugation of curcumin-loaded lipid nanoemulsions with cell-penetrating peptides increases their cellular uptake and enhances the anti-inflammatory effects in endothelial cells. *J Pharm Pharmacol*, 68(2):195–207. doi:10.1111/jphp.12513, IF 2.405.
16. MARIN L, AILINCAI D, CALIN M, STAN D, **CONSTANTINESCU CA**, URSU L, DOROFTEI F, PINTEALA M, SIMIONESCU BC, BARBOIU M, 2016. Dynameric Frameworks for DNA transfection. *ACS Biomater Sci Eng* 2(1):104–111. doi:10.1021/acsbiomaterials.5b00423, IF 3.234.
17. TUCUREANU MM, BUTOI E, GAN AM, STAN D, **CONSTANTINESCU CA**, CALIN M, SIMIONESCU M, MANDUTEANU I, 2016. Amendment of the Cytokine Profile in Macrophages Subsequent to Their Interaction With Smooth Muscle Cells: Differential Modulation by Fractalkine and Resistin. *Cytokine* 83:250-261. doi: 10.1016/j.cyto.2016.04.019, IF 3.488.
18. BUTOI E, GAN AM, TUCUREANU MM, STAN D, MACARIE RD, **CONSTANTINESCU C**, CALIN M, SIMIONESCU M, MANDUTEANU I, 2016. Cross-talk between macrophages and smooth muscle cells impairs collagen and metalloprotease synthesis and promotes angiogenesis. *Biochim Biophys Acta* 1863(7 Pt A):1568-78. doi:10.1016/j.bbamcr.2016.04.001, IF 4.739.
19. URITU CM, VARGANICI CD, URSU L, COROABA A, NICOLESCU A, DASCALU AI, PEPTANARIU D, STAN D, **CONSTANTINESCU CA**, SIMION V, CALIN M, MAIER SS, PINTEALA M, BARBOIU M, 2015. Hybrid fullerene conjugates as vectors for DNA cell-delivery. *J Mater Chem B*, 3:2433-2446. doi:10.1039/c4tb02040e, IF 5.047.
20. URITU CM, CALIN M, MAIER SS, COJOCARU C, NICOLESCU A, PEPTANARIU D, **CONSTANTINESCU CA**, STAN D, BARBOIU M, PINTEALA M, 2015. Flexible cyclic siloxane core enhances the transfection efficiency of polyethylenimine-based non-viral gene vectors. *J Mater Chem B*, 3:8250-8267. DOI: 10.1039/C5TB01342A, IF 5.047.
21. CALIN M, STAN D, SCHLESINGER M, SIMION V, DELEANU M, **CONSTANTINESCU CA**, GAN AM, PIRVULESCU MM, BUTOI E, MANDUTEANU I, BOTA M, ENACHESCU M, BORSIG L, BENDAS G, SIMIONESCU M, 2015. VCAM-1 directed target-sensitive liposomes carrying CCR2 antagonists bind to activated endothelium and reduce adhesion and transmigration of monocytes. *Eur J Pharm Biopharm* 89:18-29. doi: 10.1016/j.ejpb.2014.11.016, IF 4.245.